A 57.46/3: 5/958

PLEASE RETURN

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

FEDERAL - STATE - PRIVATE COOPERATIVE

SNOW SURVEY and WATER SUPPLY FORECASTS for MONTANA & NORTHERN WYOMING

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE,
and
MONTANA AGRICULTURAL EXPERIMENT STATION

U.S. DOCUMENTS COLLECTION
MONTANA STATE LIBRARY

In cooperation with the U.S. Forest Service, U.S. Geological Survey, National Park Service, U.S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and private organizations.

AS OF
MAY 1, 1958

MONTANA STATE LIBRARY
3 0864 1002 2930 4

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1300 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	COOPERATING WITH	LOCATION
RIVER BASINS			
Colorado, Rio Grande and Platte-Arkansas	Monthly (Feb.-May)	Colo. Exp. Station	Ft. Collins, Colo.
Columbia *Includes Alaska*	Monthly (Jan.-May)		Boise, Idaho
Upper Missouri	Monthly (Feb.-May)	Mont.Agr.Exp.Station	Bozeman, Montana
West-Wide	Semi-Annually (Oct. 1 and Apr.1)	Cooperators	Portland, Oregon
STATES			
Arizona	Semi-Monthly (Jan. 15-Apr.1)	Salt R. Valley Water Users Association	Phoenix, Arizona
Nevada	Monthly (Feb.-Apr.)	Nevada State Engineer	Reno, Nevada
Oregon	Monthly (Jan.-May)	Ore.Agr.Exp.Station	Portland, Oregon
Utah	Monthly (Jan.-May)	Utah State Engineer Utah Agr.Exp.Station	Salt Lake City, Utah
Washington	Monthly (Feb.-May)	Wash. State Dept. of Conservation and Development	Spokane, Washington
Wyoming	Monthly (Feb.-June)	Wyoming State Engineer	Casper Wyoming

Copies of the various reports may be secured from:

Head, Water Supply Forecasting Section
Soil Conservation Service
209 S.W. 5th Avenue, Portland 4, Oregon

PUBLISHED BY OTHER AGENCIES

OTHER SNOW SURVEY REPORTS		
British Columbia	Monthly (Feb.-June)	Comptroller, Water Rights Br., Dept. of Lands and Forests, Parliament Bldgs, Victoria, B.C.
California	Monthly (Feb.-May)	California Department of Water Resources, Sacramento, California

FEDERAL - STATE COOPERATIVE
SNOW SURVEYS and WATER SUPPLY FORECASTS
for
MONTANA AND NORTHERN WYOMING
(Upper Missouri and Upper Columbia River Basins)

Report Prepared by:

A. R. Codd
Hydraulic Engineer
Soil Conservation Service

Soil Conservation Service
U. S. Department of Agriculture
and
Montana Agricultural Experiment Station
Bozeman, Montana

Report issued by:

H. D. Hurd
State Conservationist
of Montana

O. W. Monson
Irrigation Engineer
Montana Agricultural
Experiment Station

R.E. Huffman, Director
Montana Agricultural
Experiment Station

WATER SUPPLY OUTLOOK
FOR THE STATE OF MONTANA
as of
MAY 1, 1958

The 1958 Water Supply from the winter snow-pack has increased to 92 percent average. April storms deposited considerable snow in the mountains, bringing the snow-pack above average at most stations.

The Columbia River basin in Montana also received an additional supply. Forecasts of stream-flow have been raised to 95 and 100 percent average.

Reservoir Storage is somewhat below average, probably reflecting the low April stream-flows. No concern is expressed regarding the filling of reservoirs to desired levels.

The soil mantle under the snow-pack is unfrozen and quite wet at all stations.

MISSOURI RIVER

JEFFERSON RIVER:

Stream-flow forecasts were raised slightly to 90 and 107 percent along the Beaverhead and Jefferson Rivers. Water supply should be adequate for irrigation.

MADISON RIVER:

The Madison River system is forecast to produce only a fair water supply. Forecasts were raised by only one percent with 88 percent average flow to enter Hebgen reservoir and 88 percent average flow to pass McAllister during the April-September period.

MISSOURI RIVER - Toston to Fort Peck:

May forecasts were raised only one percent over those issued on April first. It now appears that 2,240,000 acre feet will pass into Canyon Ferry reservoir during the April-September period.

Storms during April over the Sun River basin added sufficient water to the snow-pack to raise the forecast into Gibson reservoir to 101 percent average or 574,000 acre feet of flow during the April-September period. The Marias River near Shelby should flow 103 percent average or 543,000 acre feet during the same period.

The forecast for the Yellowstone River at Corwin Springs was raised to 92 percent average; at Billings the forecast was raised to 87 percent average.

COLUMBIA RIVER

April storms added considerable water to the snow-pack on the Clark Fork and Flathead River basins to increase the volume of April-September flow by 5 to 8 percent over those issued on April first.

CLARK FORK RIVER:

The Clark Fork River above Missoula should produce 120 percent average or 1,921,000 acre feet of water during the runoff season. The Blackfoot River above Bonner will probably produce 127 percent average or 1,083,000 acre feet. The Bitterroot River is still low; the tributary will produce a possible 95 percent average discharge which is forecast for April-September.

FLATHEAD RIVER:

Flathead River forecasts were modified upward by 4 to 12 percent, due to heavy moisture producing storms during April. The Flathead River at Columbia Falls is now expected to flow 92 percent average during the April-September period or 5,183,000 acre feet. The South Fork of the Flathead is expected to produce 2,030,000 acre feet of water into Hungry Horse reservoir during the same runoff period or 99 percent average. It is anticipated that 1,717,000 acre feet will flow into the reservoir during April-June. The forecast for the Flathead at Polson during April-September will probably be 91 percent average or 6,018,000 acre feet.

The Swan River watershed appears to have a very large snow-pack this season with near record high water content reported at snow survey courses on the Swan and Mission ranges. This year's figures are exceeded only by a few inches of water content in 1954 and 1950. The forecast for the Swan River near Big Fork is 134 percent average or 786,000 acre feet for the April-September period and 582,000 acre feet during April-June.

The combined flow of the Clark Fork and Flathead Rivers at Thompson Falls is forecast to an even 100 percent average or 11,508,000 acre feet to flow from April through September. A possible 9,603,000 acre feet flow is forecast for the April-June period.

MONTANA STREAM-FLOW FORECASTS MAY 1, 1958

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature during the forecast period will be near average. Appreciable deviations from normal of temperature and/or precipitation during the forecast period will correspondingly modify these forecasts.

	Seasonal Stream-Flow in Thousands of Acre Feet					
UPPER MISSOURI RIVER IN MONTANA	FORECAST RUNOFF	% 15-Yr. AVG.	FORE-CAST PERIOD	Measured Runoff 1956##	1955	1938-52 Average
RED ROCK RIVER						
Monida (near) (1)	73	90	Apr-Sept	60	71	81
	68	90	Apr-July	58	66	76
BEAVERHEAD RIVER						
Barratts (at)	166	94	Apr-Sept	155	119	177
	126	94	Apr-July	122	87	134
BIG HOLE RIVER						
Melrose (near)	771	104	Apr-Sept	842	592	745
	713	104	Apr-July	796	548	687
JEFFERSON RIVER						
Sappington (at)	1131	107	Apr-Sept	1045	793	1057
	1004	107	Apr-July	967	725	938
MADISON RIVER						
West Yellowstone (near)	177	89	Apr-Sept	255	183	198
	134	89	Apr-July	200	136	151
Grayling (near) (2)	368	88	Apr-Sept	488	345	420
(Net inflow to Hebgen Lk)	291	88	Apr-July	402	274	333
McAllister (near) (3)	641	88	Apr-Sept	802	593	726
	517	88	Apr-July	671	481	585
GALLATIN RIVER						
Gateway (near)	410	92	Apr-Sept	499	350	445
	353	92	Apr-July	442	296	384
Logan (at)	419	88	Apr-Sept	512	384	478
	359	88	Apr-July	452	336	410
Hyalite Cr. R.S. (at) (7)	36.7	104	Apr-Sept	29	34	35
	31.3	104	Apr-July	25	29	30
MISSOURI RIVER						
Toston (at) (3)	2240	88	Apr-Sept	2345	1730	2535*
	1895	86	Apr-July	2098	1549	2191*
Fort Benton (at) (4)	3318	98	Apr-Sept	3131	2986	3381
	2797	97	Apr-July	2722	2557	2874
Virgelle (at) (4)	3975	99	Apr-Sept	3261	3708	4013
(Loma)	3393	98	Apr-July	2806	3232	3445
Zortman (near) (4)	4241	97	Apr-Sept	3588	4264	4357
	3609	97	Apr-July	3076	3698	3726
Ft. Peck Dam (below) (5)	4171	96	Apr-Sept	3290	3743	4362
	3614	98	Apr-July	2613	3049	3666
Williston, N. D.	10338	88	Apr-Sept	9625	9533	11750
	8889	87	Apr-July	8053	8304	10228

(1) Observed flow plus change in Storage in Lima Reservoir.
(2) Observed flow plus change in Storage in Hebgen Lake.
(3) Observed flow plus change in Storage in Hebgen and Ennis Lakes.
(4) Observed flow plus change in Storage in Canyon Ferry.
(5) Observed flow plus change in Storage in Canyon Ferry and Ft. Peck Reservoirs.
(7) Observed flow plus change in Storage in Hyalite Reservoir.
(##) Preliminary data furnished by U. S. Geological Survey, subject to correction.
(*) Less than 15 years in 1938-52 period. Average for 15 yrs. nearest the base period.

Digitized by the Internet Archive
in 2014

https://archive.org/details/federalstatecoo1958mont_2

MONTANA STREAM-FLOW FORECASTS MAY 1, 1958

UPPER MISSOURI RIVER IN MONTANA	Seasonal Stream-Flow in Thousands of Acre Feet					
	FORECAST RUNOFF	% 15-Yr. AVG.	FORE-CAST PERIOD	Measured Runoff 1956##	Measured Runoff 1955	1938-52 Average
SUN RIVER						
Net inflow to Gibson Reservoir	574	101	Apr-Sept	668	517	570*
	524	101	Apr-July	618	478	521*
MARIAS RIVER						
Shelby (near)	543	103	Apr-Sept	684	614	527
	499	104	Apr-July	617	561	482
JUDITH RIVER						
Utica (near)	31.0	78	Apr-Sept	18.4	29.2	39.8
	28.4	78	Apr-July	17.6	27.3	36.3
MUSSELSHELL RIVER						
Delpine (near)	7.3	108	Apr-Sept	4.8	3.6	6.8
	6.0	107	Apr-July	4.1	2.9	5.6
YELLOWSTONE RIVER						
Corwin Springs (at)	1723	92	Apr-Sept	2427	1527	1870
	1438	92	Apr-July	2099	1254	1556
Livingston (near)	1961	92	Apr-Sept	3219	1621	2134
	1619	92	Apr-July	2322	1298	1770
Billings (at)	3502	87	Apr-Sept	4788	2958	4025
	3007	87	Apr-July	4225	2549	3446
Miles City (at)	5544	87	Apr-Sept	6175	4381	6369
	4744	88	Apr-July	5324	3816	5421
Sidney (near)	5729	86	Apr-Sept	6114	4553	6648
	4964	87	Apr-July	5315	4082	5724
SHIELDS RIVER						
Clyde Park (at)	100	95	Apr-Sept	97.0	72.1	105.6
	94	95	Apr-July	94.2	67.0	98.0
ROSEBUD RIVER						
Absarokee (near)	255	97	Apr-Sept	251.4	153.0	263.0
	205	97	Apr-July	207.6	124.5	211.9
STILLWATER RIVER						
Rosebud Cr. (above)	321	97	Apr-Sept	359.9	243.1	330.8
	280	97	Apr-July	321.1	213.1	288.1
Absarokee (near)	582	98	Apr-Sept	611.4	396.1	593.8
	489	98	Apr-July	528.7	337.6	500.0
ROCK CREEK						
Red Lodge (near)	109	102	Apr-Sept	134	71	107
	90	110	Apr-July	110	50	82
CLARK FORK RIVER						
Chance (at)	515	88	Apr-Sept	716	419	580
	461	89	Apr-July	660	386	517
Edgar (at)	555	90	Apr-Sept	773	422	614
	490	91	Apr-July	698	384	539

(##) Preliminary data furnished by U. S. Geological Survey, subject to correction.
(*) Less than 15 years in 1938-52 period. Average for 15 yrs. nearest the base period.

WYOMING STREAM-FLOW FORECASTS MAY 1, 1958

MISSOURI RIVER BASIN YELLOWSTONE RIVER TRIBUTARIES IN WYOMING	Seasonal Stream-Flow in Thousands of Acre Feet				
	FORECAST RUNOFF ***	% 15-Yr. AVG.	FORE-CAST PERIOD	Measured Runoff 1955	1938-52 Average
WIND RIVER					
Dubois (at)	80	70	Apr-Sept	66	102*
NORTH POPO AGIE RIVER					
Milford (near)	67	77	Apr-Sept	57	87*
LITTLE POPO AGIE RIVER					
Lander (near)	32	60	Apr-Sept	25	53*
SHOSHONE RIVER					
Buffalo Bill Dam (below)(12)	780	95	Apr-Sept	534	823
SHELL CREEK					
Shell (near)	70	95	Apr-Sept	72	74*

(12) Observed flow plus Storage in Buffalo Bill Reservoir.
(*) Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
(***) Forecasts prepared by George Peak, Soil Conservation Service Office, Casper Wyo.

MONTANA STREAM-FLOW FORECASTS MAY 1, 1958

UPPER COLUMBIA RIVER IN MONTANA	Seasonal Stream-Flow in Thousands of Acre Feet					
	FORECAST RUNOFF	% 15-Yr. AVG.	FORE-CAST PERIOD	Measured Runoff		1938-52 Average
				1956##	1955	
CLARK FORK RIVER						
Bonner (above) (14)	838	109	Apr-Sept	880	739	771
	738	109	Apr-July	780	645	678
	643	109	Apr-June	695	428	583
Missoula (above)	1921	120	Apr-Sept	2012	1590	1602
	1714	120	Apr-July	1817	1386	1429
	1477	120	Apr-June	1622	994	1229
Missoula (below)	3305	111	Apr-Sept	3960	3094	2971
	3014	112	Apr-July	3654	2804	2700
	2640	113	Apr-June	3290	2070	2335
St. Regis (at)	4448	113	Apr-Sept	5749	4201	3951
	4035	112	Apr-July	5326	3775	3588
	3573	115	Apr-June	4817	2843	3112
Plains (near) (15)	10782	100	Apr-Sept	15138	11038	10747
	9845	100	Apr-July	14070	10018	9813
	8461	100	Apr-June	12531	7810	8434
Thompson Falls (at) (15)	11508	100	Apr-Sept	15920	11705	11479
	10526	100	Apr-July	14809	10678	10500
	9032	100	Apr-June	13188	8322	9009
Cabinet Gorge (at) (15)	12235	100	Apr-Sept	- -	- -	12211
	11208	100	Apr-July	- -	- -	11186
	9603	100	Apr-June	- -	- -	9584
BLACKFOOT RIVER						
Bonner (near)	1083	127	Apr-Sept	1132	851	851
	976	127	Apr-July	1037	742	767
	834	126	Apr-June	927	566	663
BITTERROOT RIVER						
Darby (near)	499	95	Apr-Sept	740	540	525
	463	95	Apr-July	701	500	487
	405	94	Apr-June	649	394	429
At Mouth (16)	1296	95	Apr-Sept	1948	1504	1369
	1209	95	Apr-July	1837	1418	1270
	1067	97	Apr-June	1667	1075	1105

(14) Difference in observed flow, Clark Fork above Missoula & Blackfoot at Bonner.
(15) Observed flow plus change in Storage in Flathead Lake & Hungry Horse Reservoir.
(16) Difference in observed flow, Clark Fork above and below Missoula.
(*) Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
(##) Preliminary data furnished by U. S. Geological Survey, subject to correction.

MONTANA STREAM-FLOW FORECASTS MAY 1, 1958

UPPER COLUMBIA RIVER IN MONTANA	Seasonal Stream-Flow in Thousands of Acre Feet					
	FORECAST RUNOFF	% 15-Yr. AVG.	FORE-CAST PERIOD	Measured Runoff		1938-52 Average
				1956##	1955	
FLATHEAD RIVER						
Columbia Falls (near)	1630	94	Apr-Sept	2308	1745	1729
(North Fork)	1485	94	Apr-July	2139	1576	1575
	1278	95	Apr-June	1864	1233	1350
Columbia Falls (at) (17)	5183	92	Apr-Sept	7164	5707	5619
	4831	93	Apr-July	6720	5268	5214
	4236	93	Apr-June	5959	4208	4530
Polson (near) (15)	6018	91	Apr-Sept	8603	6594	6612
	5598	91	Apr-July	8080	6111	6150
	4840	91	Apr-June	7137	4857	5317
MIDDLE FORK FLATHEAD RIVER						
West Glacier (near)	1609	97	Apr-Sept	2093	1682	1659*
	1489	97	Apr-July	1956	1551	1540*
	1256	94	Apr-June	1712	1224	1330*
SOUTH FORK FLATHEAD RIVER						
Columbia Falls (near) (17)	2030	99	Apr-Sept	2593	2085	2058
(Net inflow to Hungry	1695	99	Apr-July	2488	1977	1950
Horse Reservoir)	1717	99	Apr-June	2279	1630	1727
SWAN RIVER						
Big Fork (near)	786	134	Apr-Sept	750	570	584
	699	135	Apr-July	676	499	518
	582	136	Apr-June	581	578	427

(15) Observed flow plus change in Storage in Flathead Lake & Hungry Horse Reservoir.
(17) Observed flow plus change in Storage in Hungry Horse Reservoir.
(##) Preliminary data furnished by U. S. Geological Survey subject to correction.
(*) Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.

INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

Drainage Basin and Course Name	Montana Number	Elev.	Location		Range Long.	Record Began	Measuring Dates	Measured By
			Sec. Lat.	Twp.				
MISSOURI RIVER DRAINAGE								
JEFFERSON RIVER								
(ROCK-BEAVERHEAD)								
Lakeview Ridge	11E3	7400	27	14S	2W	1948	3,4,5	10
Lakeview Canyon	11E4	6930	26	14S	2W	1948	3,4,5	10
Limekiln	12E2	6950	5	15S	9W	1948	3,4	1
White Pine Ridge	12E1	8850	18	14S	9W	1948	3,4	1
(HORSE PRAIRIE)								
Bloody Dick	13D10	7600	12	8S	16W	1948	3,4	1
Gold Stone	13D9	8100	11	8S	16W	1948	3,4	1
Lemhi Pass	13E1	7480	9	10S	15W	1948	3,4	1
Terrell Creek	13D12	6650	14	9S	15W	1948	3,4	1
Trail Creek	13E2	7090	15	10S	15W	1948	3,4	1
Selway Junction	13D11	6800	27	8S	15W	1948	3,4	1
(BIG HOLE)								
Big Hole Pass	13D3	7400	28	3S	18W	1948	3,4	1
Big Hole Pass-Be.	13D4	6900	24	3S	18W	1948	3,4	1
East Boundary	13D5	6700	22	3S	17W	1948	3,4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5	1,3
Jahnke Creek	13D8	7340	25	7S	16W	1948	3,4	1
Miner Forks	13D6	7300	24	6S	17W	1948	3,4	1
Miner Lake	13D7	6720	10	6S	16W	1945	3,4,5	1
(WISE RIVER)								
Anderson Mdw.	13D14	7000	18	3S	12W	1948	3,4	1
Elk Horn	13D15	8450	15	4S	12W	1934	3,4,5	3
Wise River	13D13	6300	15	2S	12W	1948	3,4	1
(RUBY RIVER)								
Cottonwood	11E2	5900	24	10S	3W	1948	3,4	1
Cottonwood (Upper)	11E1	8400	30	10S	2W	1948	3,4	1
Flashlight	12D3	6950	22	8S	7W	1945	3,4,5	1
Tobacco Root	12D2	6900	13	4S	4W	1948	3,4	1
Vigilante	11D1	6125	28	9S	3W	1948	3,4	1
MADISON RIVER								
Hebgen	11E5	6550	22	11S	3E	1934	1,2,3,4,5	3
West Yellowstone	11E7	6700	34	13S	5E	1934	1,2,3,4,5	3
Norris Basin	10E2	7500	44°-42'		110°-42'	1935	3,4	6
GALLATIN RIVER								
Devil's Slide	10D4	8100	14	5S	6E	1935	2,3,4,5	2,1
Hood Meadow	10D3	6600	22	4S	6E	1934	2,3,4,5	2,1
Mystic Lake	10D2	6600	30	3S	7E	1935	2,3,4	7
New World	10D1	6700	24	3S	6E	1939	1,2,3,4,5	7
21-Mile	11E6	7150	1	11S	5E	1934	1,2,3,4,5	3
MISSOURI RIVER MAIN STEM								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	3
Crystal Lake	9C1	6100	19	12N	18E	1941	3,4	1,2
Grasshopper	10C2	7000	19	9N	8E	1938	3,4	2
Kings Hill	10C1	7950	35	13N	7E	1937	3,4,5	3
Picnic Grounds	12C6	6500	10	5N	6W	1940	2,3,4	4
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1
Stemple Pass	12C1	6900	16	13N	7W	1934	3,4,5	3
Ten Mile Creek L	12C2	6250	13	8N	6W	1935	1,2,3,4,5	3
Ten Mile Creek M	12C3	6800	13	8N	6W	1934	1,2,3,4,5	3
Ten Mile Creek U	12C4	8000	19	8N	5W	1935	1,2,3,4,5	3
(TETON RIVER)								
Freight Creek	12A1	6000	13	26N	10W	1948	3,4	1
Waldron Creek	12B2	5600	16	25N	9W	1948	3,4	1
West Fork	12B1	6000	6	25N	9W	1948	3,4	1
(SUN RIVER)								
Benchmark	12B8	5500	9	20N	10W	1948	3,4	1
Cabin Creek	12B6	5400	33	23N	10W	1949	3,4	1,2
5-Bull	12B9	5600	36	20N	10W	1948	3,4	1,2
Gates Park	12B5	5300	31	24N	10W	1949	3,4	1,2
Goat Mountain	12B7	7000	20	22N	10W	1934	3,4	3
Wrong Ridge	12B3	6800	17	25N	10W	1949	3,4	1,2
Wrong Creek	12B4	5700	32	25N	10W	1949	3,4	1,2
(MARIAS RIVER)								
Marias Pass	13A5	5250	34	30N	14W	1936	1,2,3,4,5	3
(MILK RIVER)								
Rocky Boy	9A1	5200	15	28N	16E	1941	3,4	7
(MUSSELSHELL RIVER)								
Grasshopper	10C2	7000	19	9N	8E	1938	3,4	2
MISSOURI RIVER DRAINAGE (cont.)								
(UPPER YELLOWSTONE)								
Camp Senia	9C1	7890	2	8S	18E	1937	4	1
Canyon	10E3	7750	44°-44'		110°-30'	1938	1,2,3,4,5	6
Cooke City	10D7	7400	25	9S	14E	1937	1,2,3,4,5	6
Crevice Mt.	10D5	8400	22	9S	9E	1935	3,4	2
Independence	10D6	8000	22	7S	12E	1941	3,4	1
Lake Camp	10E4	7850	44°-34'		110°-24'	1937	1,2,3,4,5	6
Lupine Creek	10E1	7300	44°-54'		110°-37'	1938	1,2,3,4,5	6
Lodgepole	9E1	8200	32	56N	106W	1940	2,3,4,5	1,4
(SHIELDS RIVER)								
Porcupine	10C3	6500	10	4N	10E	1938	3,4	1
LOWER YELLOWSTONE								
(WIND RIVER) Wyoming								
Big Warm	9F12	8800	36	42N	109W	1955	2,3,4,5	1
Brooke Lake #3	10F8	9200	23	44N	110W	1939	2,3,4,5	1
Burroughs Creek	9F4	8800	15	43N	107W	1948	2,3,4,5	1
Dinwoodie	9F10	10000	21	39N	105W	1948	2,3,4,5	1
Dry Creek	9F9	9500	34	4N	6W	1948	2,3,4,5	1
DuNoir	9F6	8750	27	42N	108W	1940	2,3,4,5	1
East Fork	9F13	9200	23	44N	104W	1956	2,3,4,5	1
Geyser Creek	9F7	8500	12	41N	108W	1948	2,3,4,5	1
Little Warm	9F8	9500	24	41N	108W	1948	2,3,4,5	1
Sheridan R.S. #1	9F5	7500	3	42N	109W	1939	2,3,4,5	1
Sheridan R.S. #2	9F14	7500	3	42N	109W	1955	2,3,4,5	1
T-Cross Ranch	9F3	8000	1	43N	107W	1940	2,3,4,5	1
Togwotee Pass	10F9	9600	29	44N	110W	1936	2,3,4,5	11
(POPO AGIE RIVER) Wyoming								
Blue Ridge	8G2	9500	23	31N	101W	1939	2,3,4,5	1
Bruce's Camp	8G5	6500	24	32N	101W	1955	2,3,4	1
Hobb's Park	9G3	10000	22	2S	3W	1948	2,3,4,5	1
Mosquito Park R.S.	9G4	9500	23	2S	3W	1940	2,3,4,5	1
Sawmill Glade	8G1	8500	3	31N	101W	1939	2,3,4,5	1
South Pass	8G3	9000	13	30N	101W	1939	2,3,4,5	1
St. Lawrence	9F11	9000	26	1N	4W	1940	2,3,4,5	1
Trout Creek	9G2	8400	5	2S	2W	1948	2,3,4,5	1
(OWL CREEK) Wyoming								
Beavers Mill	9F2	8900	6	43N	102W	1948	2,3,4,5	1
Owl Creek	8F1	8700	36	43N	101W	1948	2,3,4,5	1
(GREYBULL RIVER) Wyoming								
Timber Creek #1	9E2	8800	25-	47N	103W	1948	2,3,4,5	1
Timber Creek #2	9E3	8800	25	47N	103W	1955	2,3,4,5	1
Wood River #1	9F1	8000	28	46N	103W	1939	2,3,4,5	1
Wood River #2	9F15	8000	28	46N	103W	1956	2,3,4,5	1
(SHOSHONE RIVER) Wyoming								
East Entrance	10E6	7000	17	52N	109W	1948	1,2,3,4,5	6
Sylvan Pass	10E5	7100	12	52N	110W	1936	1,2,3,4,5	6
(NOWOOD CREEK) Wyoming								
Cold Springs Camp	7E25	8700	1	50N	88W	1956	2,3,4,5	1
Medicine Lodge Lks	7E24	9500	7	51N	87W	1956	2,3,4,5	1
Munkers Pass	7E8	9700	11	48N	85W	1950	2,3,4,5	1
North Powder	7E36	8300	20	47N	85W	1956	2,3,4,5	1
Onion Gulch	7E27	8100	31	48N	85W	1956	2,3,4,5	1
Tensleep Lake	7E26	9075	33	50N	86W	1956	2,3,4,5	1
Tensleep R.S.	7E7	8300	30	49N	86W	1935	2,3,4,5	1
Tyrell R.S.	7E35	8300	30	49N	86W	1956	2,3,4,5	1
(SHELL CREEK) Wyoming								
Bald Mountain	7E21	9600	33	56N	91W	1956	2,3,4,5	1
Beaver-Tongue Div.	7E20	9200	12	55N	91W	1956	2,3,4,5	1
Bone-Spring Div.	7E18	9200	32	55N	89W	1956	2,3,4,5	1
Granite Creek Camp	7E22	7800	15	53N	89W	1956	2,3,4,5	1
Granite Pass	7E17	8950	19	54N	88W	1956	2,3,4,5	1
Horse-Trail Div.	7E19	9200	29	55N	90W	1956	2,3,4,5	1
Ranger Creek	7E4	8800	32	53N	88W	1935	2,3,4,5	1
Shell Creek	7E23	9600	12	52N	88W	1956	2,3,4,5	1
(PORCUPINE CREEK) Wyoming								
Five Spgs. Falls	7E31	7500	19	56N	92W	1956	2,3,4,5	1
Medicine Wheel	7E30	9000	24	56N	92W	1956	2,3,4,5	1
(TONGUE RIVER) Wyoming								
Beaver Tongue Div.	7E20	9200	12	55N	91W	1956	2,3,4,5	1
Big Goose #1	7E2	7700	4	53N	86W	1935	2,3,4,5	1
Big Goose #2	7E32	7700	4	53N	86W	1955	2,3,4,5	1
Bone-Spring Div.	7E18	9200	32	55N	89W	1956	2,3,4,5	1
Burgess R.S. #1	7E1	7900	36	56N	89W	1950	2,3,4,5	1
Burgess R.S. #2	7E33	7900	36	56N	89W	1955	2,3,4,5	1
Dome Lake #1	7E3	8800	11	53N	87W	1950	2,3,4,5	1
Dome Lake #2	7E34	8800	11	53N	87W	1950	2,3,4,5	1
Gloom Creek	7E14	9300	32	55N	87W	1956	2,3,4,5	1
Granite Pass	7E17	8950	19	54N	88W	1956	2,3,4,5	1
MISSOURI RIVER DRAINAGE (cont.)								
(TONGUE RIVER cont.)								
Horse Trail Div.	7E19	9200	29	55N	90W	1956	2,3,4,5	1
Lake Geneva	7E16	9000	7	52N	86W	1956	2,3,4,5	1
North Tongue	7E15	8800	17	55N	89W	1956	2,3,4,5	1
Sibley Lake	7E11	8000	10	55N	88W	1956	2,3,4,5	1
Sucker Creek	7E12	9000	19	55N	87W	1956	2,3,4,5	1
Steamboat Point	7E10	7500	32	56N	87W	1956	2,3,4,5	1
Wood Rock G.S.	7E13	8500	3	54N	88W	1956	2,3,4,5	1
(POWDER RIVER) Wyoming								
Crazy Woman	6E2	8200	6	47N	84N	1956	2,3,4,5	1
Muddy Creek G.S.	6E1	7800	2	48N	84N	1956	2,3,4,5	1
Munkers Pass	7E8	9700	11	48N	85W	1950	2,3,4,5	1
North Powder #2	7E36	8300	20	47N	85W	1956	2,3,4,5	1
Onion Gulch	7E27	8100	31	48N	85W	1956	2,3,4,5	1
Soldier Park	7E5	8700	36	51N	85W	1950	2,3,4,5	1
Sour Dough	7E6	8500	17	49N	84W	1936	2,3,4,5	1
COLUMBIA RIVER BASIN								
KOOTENAI RIVER								
Baree Creek	15B11	5500	6	25N	30W	1956	4,5,5½	2
Baree Mountain	15B1	6000	1	25N	31W	1937	4,5,5½	2
Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5,5½	1,2
Weasel Divide	14A7	5450	8	37N	24W	1955	4,5,5½	1,2
FLATHEAD RIVER								
Basin Creek	13B14	5000	11	19N	12W	1951	2,3,4,5	2
Big Creek	13B3	6750	6&7	22N	18W	1941	3,4,5	5
Brush Creek	14A4	5000	13	30N	26W	1937	3,4,5	1,2
Cattle Queen	13A1	4700	7	35N	17W	1939	3,4,5	6
Desert Mountain	13A2	5600	24	31N	19W	1937	1,2,3,4,5	1,2
Hell Roaring Div.	14A3	5770	35	32N	22W	1942	3,4,5	1,2
Holbrook	13B13	4530	18	21N	13W	1951	1,2,3,4,5	2
Kishenehn	14A6	3890	14	37N	22W	1954	4,5	6
Logan Creek	14A5	4300	34	30N	24W	1937	3,4,5	2
Marias Pass	13A5	5250	34	30N	14W	1934	1,2,3,4,5	3
Mineral Creek	13A16		27	35N	17W	1956	3,4,5	6
Quintonkon	13A13	3800	11	26N	17W	1951	2,3,4,5	1,2
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	3,4,5	1,2
Strawberry Lake	13A10	6500	11	28N	19W	1948	3,4,5	2
Trinkus Lake	13B1	6500	9	25N	17W	1948	3,4,5	2
Trout Lake	13A12	3600	21	28N	17W	1948	3,4,5	1,2
Twin Creeks	13B11	3580	14	26N	16W	1951	2,3,4,5	1,2
Upper Holland Lk.	13B5	7000	28	20N	16W	1948	3,4,5	2
CLARK FORK								
Baree Creek	15B11	5500	6	25N	30W	1956	4,5,5½	2
Baree Mountain	15B1	6000	1	25N	31W	1937	4,5,5½	2
Coyote Hill	13B10	4200	12	18N	16W	1952	1,2,3,4,5	2
El Dorado Mine	13C9	7800	23	8N	12W	1946	4	1
Fred Burr Pass	13C11	8000	12	6N	13W		3,4,5	1
Freezeout Summit	15B10	6800	21	15N	27W	1951	4,5	2
Gold Creek Lk.	13C10	7200	14	8N	12W	1946	4	1
Hoodoo Summit	15C1	6200	9&16	14N	27W	1937	4,5	2
Intergaard	13C4	6450	6	5N	13W	1939	2,3,4	4
Lubrecht Forest #6	13C8	5400	11	14N	15W	1951	1,2,3,4,5	12
N. Fork Flinter Cr.	13C12	7000	27	6N	13W	1958	3,4,5	1
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,4,5	5
Picnic Grounds	12C6	6500	10	5N	6W	1940	2,3,4	4
Pipestone Pass	12D1	7200	10	1N	7W	1938	2,3,4,5	1
Slide Rock Mt.	13C2	7100	26	10N	16W	1937	4	1
Southern Cross	13C5	6500	8	5N	13W	1939	2,3,4	4
Stemple Pass	12C1	6900	16	13N	7W	1934	3,4,5	3
Storm Lake	13C7	7780	19	4N	13W	1939	2,3,4	1
Stuart Mill	13C6	6500	19	5N	13W	1939	2,3,4	4
Stuart Mountain	13C1	7400	6	14N	18W	1936	4	1,2
TV Mountain	14B1	6800	33	15N	19W	1956	1,2,3,4,5	1
BITTERROOT RIVER								
East Fork R.S.	13D1	5400	16	2N	17W	1937	4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5	3,1
Lolo Pass	14C5	5230	16	38N	15E	1956	3,4,5,5½	2
Mud Creek Pasture	14C1	4500	24	11N	24W	1937	3	1
Nez Perce Camp	14D2	5580	19&20	1S	23W	1937	3,4,5	1
Powell R.S.	14C6	4230	33	37N	14E	1956	3,4,5,5½	2
Skalkaho Summit	13C3	7259	30	6N	17W	1937	4	1
SASKATCHEWAN RIVER BASIN								
ST. MARY RIVER								
Josephine Upper	13A15	6000	48°-50'		113°-42'	1956	5	3,9
Josephine Lower #9	13A14	4900	48°-47'		113°-41'	1956	5	
Mount Allen #7	13A7	7000	48°-44'		113°-40'	1922	5	3,9
Piegan Pass #4	13A4	5000	48°-46'		113°-40'	1922	5	3,9
Piegan #6	13A6	6500	48°-45'		113°-42'	1922	5	3,9
Ptarmigan #8	13A8	5800	48°-50'		113°-42'	1922	5	3,9

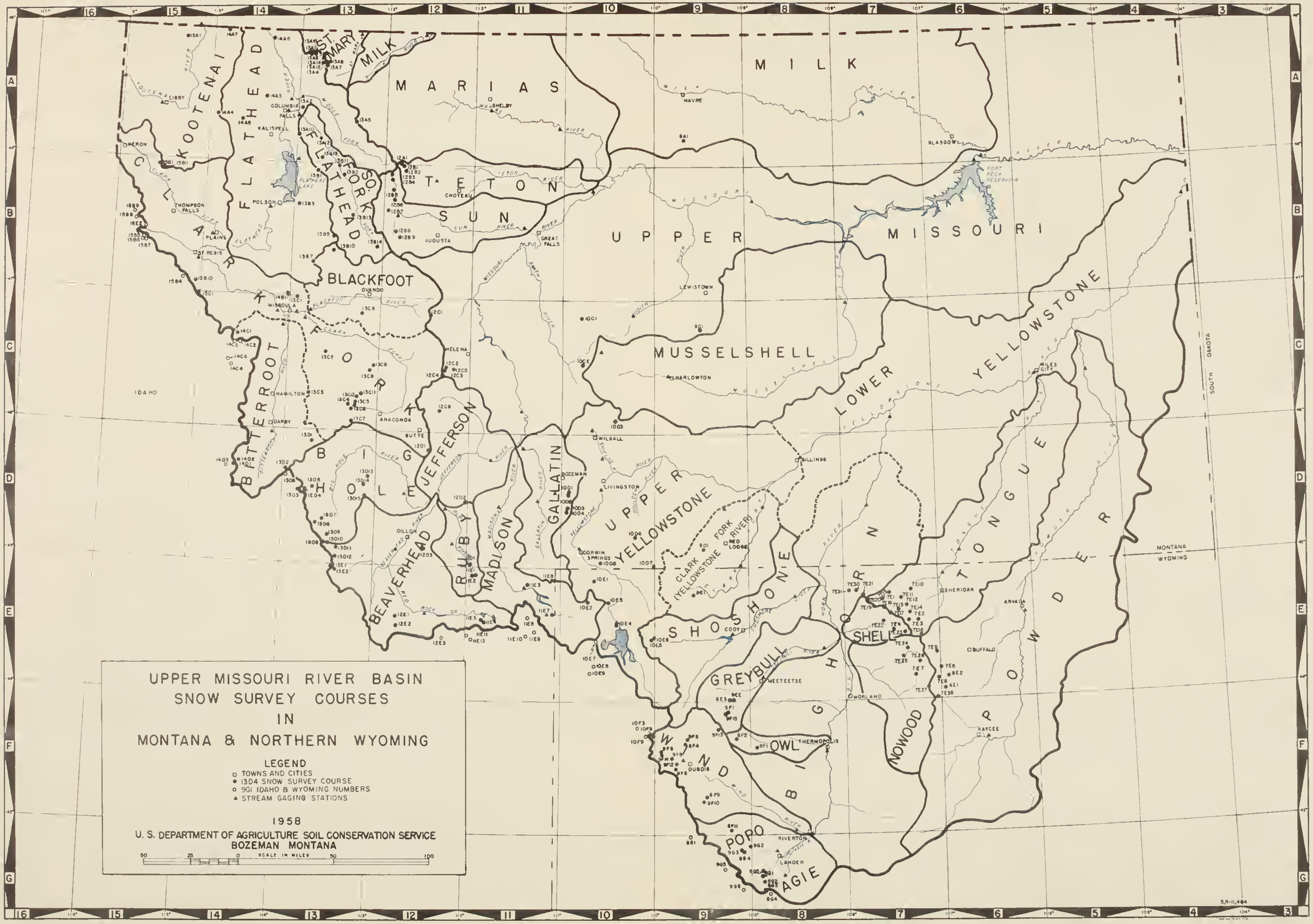
---

a. Numerals 1,2,3,4 and 5 refer to January 1, February 1, March 1, April 1 and May 1.

b. Numerals refer to Agency that secures the snow survey as follows:

1. Soil Conservation Service
2. U. S. Forest Service
3. U. S. Geological Survey
4. Montana Power Company
5. U. S. Indian Service
6. National Park Service
7. Montana Experiment Station
8. City of Bozeman
9. Dominion Water & Power Bureau
10. U. S. Fish and Wildlife Service
11. U. S. Bureau of Reclamation
12. Montana State Forestry School

REVISED MARCH 1 1955 5R-11484-A 57M-100 3(3)



UPPER MISSOURI RIVER BASIN
SNOW SURVEY COURSES
IN
MONTANA & NORTHERN WYOMING

LEGEND
□ TOWNS AND CITIES
● 13D4 SNOW SURVEY COURSE
○ 9G1 IDAHO & WYOMING NUMBERS
▲ STREAM GAGING STATIONS

1958

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
BOZEMAN MONTANA

50 25 0 SCALE IN MILES 50 100

MONTANA SNOW SURVEYS - ABOUT MAY 1, 1958

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS						Total Years of Record
			Date of Survey	1958 Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.)			
						1957	1956	15-Year Average 1938-52	
JEFFERSON RIVER									
(Rock-Beaverhead)									
Lakeview Canyon	11E4	6930	5/1	41	13.2	12.2	7.0	10.1**	7
Lakeview Ridge	11E3	7400	5/1	36	11.7	11.0	4.7	7.6**	7
(Big Hole)									
Gibbons Pass	13D2	7100	4/30	73	26.5	26.0	27.2	20.6*	22
#Moose Creek	13D16	6200				10.3	15.8	10.6**	14
(Wise River)									
Elk Horn	13D15	8450	4/30	38	11.8	10.6	9.8	7.0*	15
MADISON RIVER									
Hebgen	11E5	6550	4/28	26	8.9	12.4	1.6	2.6	24
Norris Basin	10E2	7500	4/30	22	7.7	8.1	5.7	6.0**	6
21-Mile	11E6	7150	4/28	46	14.4	21.5	18.8	11.8	21
W. Yellowstone	11E7	6700	4/28	16	5.0	10.8	5.7	3.6	24
GALLATIN RIVER									
Devil's Slide	10D4	8100	4/26	80	26.6	24.6	26.2	22.0	23
Hood Meadow	10D3	6600	4/27	35	10.4	6.9	5.8	4.3	23
21-Mile	11E6	7150	4/28	46	14.4	21.5	18.8	11.8	21
MISSOURI RIVER MAIN STEM									
Chessman Res.	12C5	6200	4/29	21	4.8	3.1	2.3	1.6	22
Kings Hill	10C1	7950	4/30	45	14.6	13.4	12.3	12.7*	17
Pipestone Pass	12D1	7200	5/2	36	10.4	5.2	0.7	2.2*	18
Stemple Pass	12C1	6900	4/28	42	13.4	9.5	9.4	6.8*	20
Tenmile, Lower	12C2	6250	4/26	26	6.7	6.6	2.7	2.0	22
Tenmile, Middle	12C3	6800	4/26	47	13.4	6.6	9.9	6.9	23
Tenmile, Upper	12C4	8000	4/26	59	18.5	15.1	14.7	10.4	22
(Marias River)									
Marias Pass	13A5	5250	4/29	39	15.5	17.0	21.4	9.9	22

*Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
**Average for period of record.
#Adjacent Basin.

MONTANA SNOW SURVEYS - ABOUT MAY 1, 1958

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS						
			Date of Survey	1958 Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.)			Total Years of Record
						1957	1956	15-Year Average 1938-52	
LOWER YELLOWSTONE (Wind River)									
Big Warm	9F12	8800	4/25	21	4.7	11.8	13.3	- -	3
Brooks Lake	10F8	9200	4/24	69	23.2	28.1	37.1	26.5*	21
Burroughs Creek	9F4	8800	4/26	41	10.8	15.7	23.5	16.4**	9
Dinwoodie	9F10	10000	4/27	46	10.8	16.4	21.8	15.9**	9
Dry Creek	9F9	9500	4/27	28	5.9	10.4	11.2	8.6**	9
DuNoir	9F6	8750	4/25	21	5.2	10.7	14.0	7.4*	16
Geyser Creek	9F7	8500	4/25	16	4.1	10.2	11.4	6.8**	9
Little Warm	9F8	9500	4/25	57	16.6	23.9	28.7	21.5**	9
Sheridan R.S.#2	9F14	7500	4/24	14	2.7	8.0	9.7	- -	3
T-Cross Ranch	9F3	8000	4/26	10	1.9	7.4	9.0	4.6**	15
Togwotee Pass	10F9	9600	5/1	73	29.4	32.7	47.4	34.8**	9
LOWER YELLOWSTONE (Popo Agie River)									
Blue Ridge	8G2	9500	5/1	44	12.2	15.3	15.6	12.5*	18
Hobbs Park	9G3	10000	4/29	65	16.4	22.7	27.3	23.1**	9
Mosquito Park R.S.	9G4	9500	4/29	38	9.0	13.9	9.7	8.2**	13
Sawmill Glade	8G1	8500	5/1	32	9.4	11.6	4.3	6.8*	18
South Pass	8G3	9000	5/1	40	11.4	19.0	19.1	14.6*	18
St. Lawrence R.S.	9F11	9000	4/28	26	5.6	11.4	9.4	7.8**	14
Trout Creek	9G2	8400	4/29	24	6.1	10.4	0.0	2.9**	9
LOWER YELLOWSTONE (Owl Creek)									
Owl Creek	8F1	8700	4/30	34	9.0	8.2	6.8	7.6**	8
LOWER YELLOWSTONE (Greybull River)									
Timber Creek #2	9E3	8800	4/24	30	6.8	9.0	3.0	- -	2
Wood River #2	9F15	8000	4/25	28	7.0	12.4	3.5	- -	3
LOWER YELLOWSTONE (Shoshone River)									
East Entrance	10E6	7000	4/29	21	7.8	10.2	2.2	- -	4
Sylvan Pass	10E5	7100	4/29	37	12.6	15.1	13.0	8.8*	16

*Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
**Average for period of record.

MONTANA SNOW SURVEYS - ABOUT MAY 1, 1958

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS			Past Record Water Content (In.)			Total Years of Record
			Date of Survey	1958 Snow Depth (In.)	Water Content (In.)	1957	1956	15-Year Average 1938-52	
LOWER YELLOWSTONE (Nowood Creek)									
Cold Springs Camp	7E25	8700	4/26	26	7.2	6.1	6.6	- -	2
Medicine Lodge Lks	7E24	9500	4/26	45	11.8	- -	10.8	- -	1
Munkers Pass (Muddy)	7E8	9700	5/2	42	12.2	11.4	12.4	9.4**	7
Onion Gulch	7E27	8100	5/2	36	10.3	8.2	7.3	- -	2
Tensleep Lake	7E26	9075	4/27	51	11.7	- -	11.4	- -	1
Tensleep R.S.	7E7	8300	4/27	31	7.4	1.9	3.2	4.5	22
LOWER YELLOWSTONE (Shell Creek)									
Bald Mountain	7E21	9600	4/22	68	19.9	23.5	24.2	- -	2
Beaver-Tongue Div.	7E20	9200	4/21	63	17.0	19.3	23.6	- -	2
Bone-Spring Div.	7E18	9200	5/3	64	20.3	19.8	20.8	- -	2
Granite Cr. Camp	7E22	7800	4/25	10	1.5	0	0		2
Granite Pass	7E17	8950	5/3	64	20.3	19.9	21.2	- -	2
Ranger Creek	7E4	8800	4/25	37	8.2	9.2	8.2	6.4*	21
Shell Creek	7E23	9600	4/25	63	15.2	15.6	17.9	- -	2
LOWER YELLOWSTONE (Porcupine Creek)									
Five Springs Falls	7E31	7500	4/30	26	7.2	5.6	4.6	- -	2
Medicine Wheel	7E30	9000	4/21	49	14.8	16.3	15.5	- -	2
LOWER YELLOWSTONE (Tongue River)									
Beaver-Tongue Div.	7E20	9200	4/21	63	17.0	19.3	23.6	- -	2
Big Goose #2	7E32	7700	4/29	55	12.3	11.3	9.9	- -	3
Bone-Spring Div.	7E18	9200	5/3	64	20.3	19.8	20.8	- -	2
Burgess R.S. #2	7E33	7900	4/22	35	6.3	8.4	8.7	- -	3
Dome Lake #2	7E34	8800	4/29	60	13.5	13.7	14.2	- -	2
Gloom Creek	7E14	9300	4/24	88	16.9	16.0	17.3	- -	2
Granite Pass	7E17	8950	5/3	64	20.3	19.9	21.2	- -	2
Sibley Lake	7E11	8000	4/25	59	12.6	10.9	10.4	- -	2
Sucker Creek	7E12	9000	4/24	76	14.9	15.3	13.8	- -	2
Steamboat Point	7E10	7500	5/3	47	12.5	11.0	9.8	- -	2
Wood Rock G.S.	7E13	8500	4/25	57	10.7	15.2	13.7	- -	2
LOWER YELLOWSTONE (Powder River)									
Muddy Creek G.S.	7E28	7800	5/1	20	5.7	3.6	5.1	- -	2
Munkers Pass (Muddy)	7E8	9700	5/2	42	12.2	11.4	12.4	9.4**	7
Onion Gulch	7E27	8100	5/2	36	10.3	8.2	7.3	- -	2
Soldier Park	7E5	8700	5/1	38	10.8	6.6	11.0	5.2**	7
Sour Dough	7E6	8500	5/1	38	10.5	10.4	10.8	5.4*	18

*Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
**Average for period of record.

MONTANA SNOW SURVEYS - ABOUT MAY 1, 1958

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS						Total Years of Record
			Date of Survey	1958 Snow Depth (In.)	1958 Water Content (In.)	Past Record Water Content (In.) 1957	1956	15-Year Average 1938-52	
KOOTENAI RIVER (above Libby, Montana)									
Baree Creek	15B11	5500	5/1	95	48.1	46.6	51.0	- -	2
Baree Mountain	15B1	6000	4/30	94	42.9	45.6	57.4	40.3	21
Bluebird Basin	14A1	6800	Est.	93	41.8	36.4	52.6	36.4*	19
Brush Creek	14A4	5000	4/29	Trace		11.8	13.7	8.7**	14
Fernie	Can	3500	5/1	0	0	0	6.0	3.8**	12
Ferguson	Can	3000	4/26	35	16.4	17.1	20.3	17.4**	12
Gray Creek	Can	5100	4/27	49	17.5	21.5	20.3	20.6**	10
Kimberley	Can	3800	4/27	3	0.7	0.0	1.4	- -	3
Marble Canyon	Can	5000	4/28	35	12.3	14.2	11.7	13.7**	11
New Fernie	Can	4100	5/1	0	0	0.0	8.6	7.7**	6
Red Mountain	15A1	6000	4/29	55	20.3	18.4	25.2	15.1	20
Sandon	Can	3500	4/28	8	4.0	5.3	6.3	7.3**	8
Sinclair Pass	Can	4500	4/28	0	0	1.9	3.1	3.4**	8
Smith Creek	16A1	4800	4/30	102	48.7	43.2	55.4	37.3*	19
Sullivan Mine	Can	5100	4/28	38	13.5	12.1	16.1	11.3**	12
Weasel Divide	14A7	5450	4/30	80	34.0	32.6	41.0	31.3*	19
FLATHEAD RIVER									
Basin Creek	13B14	5000	4/30	Trace		0.0	0.0	2.1**	7
Big Creek	13B3	6750	4/29	124	56.4	48.1	48.5	45.2**	9
Bluebird Basin	14A1	6800	Est.	93	41.8	36.4	52.6	36.4*	19
Brush Creek	14A4	5000	4/29	Trace		11.8	13.7	8.7**	14
Coyote Hill	13B10	4200	5/1	4	1.4	0.7	0.9	2.2**	11
Desert Mountain	13A2	5600	4/25	39	15.8	15.0	15.5	9.6	21
Hell Roaring Div.	14A3	5700	4/23	82	32.1	30.6	32.0	28.0*	16
Holbrook	13B13	4530	4/30	0	0	0.0	0.0	1.7**	7
Logan Creek	14A5	4300	4/29	0	0	6.9	4.8	1.6*	19
Marias Pass	13A5	5250	4/29	39	15.5	17.0	21.4	9.9	23
N. Fork Jocko	13B7	6330	5/1	107	51.7	42.8	48.3	40.8**	10
Spotted Bear Mt.	13B2	7000	4/29	31	11.2	8.9	10.9	11.7**	7
Strawberry Lake	13A10	6500	5/1	102	47.3	42.9	41.2	41.3**	9
Trinkus Lake	13B1	6500	5/1	106	48.1	42.0	36.4	41.5**	9
Trout Lake	13A12	3600	4/28	9	3.3	6.4	5.9	9.4**	10
Twin Creeks	13B11	3580	4/28	Trace		0.0	0.0	1.3**	7
Upper Holland	13B5	7000	4/28	91	36.5	34.2	39.5	36.5**	7
Weasel Divide	14A7	5450	4/30	80	34.0	32.6	41.0	31.2*	19

*Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
**Average for period of record.

MONTANA SNOW SURVEYS - ABOUT MAY 1, 1958

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS						Total Years of Record
			Date of Survey	1958 Snow Depth (In.)	1958 Water Content (In.)	Past Record Water Content (In.) 1957	1956	15-Year Average 1938-52	
UPPER CLARK FORK									
Baree Creek	15B11	5500	5/1	95	48.1	46.6	51.0	- -	2
Baree Mountain	15B1	6000	4/30	94	42.9	45.6	57.4	40.3	21
Coyote Hill	13B10	4200	5/1	4	1.4	0.7	0.9	2.2**	11
Chessman Res.	12C5	6200	4/29	21	4.8	3.1	2.3	1.6	22
Fish Lake, Ida.	21B4	5000	4/29	90	41.7	42.9	47.2	45.5	3
Freezeout Summit	15B10	7000	4/30	86	36.4	36.2	50.0	31.5*	16
Hoodoo Creek	15C1	6200	4/30	112	47.2	51.0	63.1	43.4*	15
Lubrecht For. #6	13C8	5400	5/1	0	0	0.0	0.0	0.0**	6
N. Fork Jocko	13B7	6330	5/1	107	51.7	42.8	48.3	40.8**	10
Pipestone Pass	12D1	7200	5/2	36.	10.4	5.2	0.7	2.2*	18
Smith Creek	16A1	4800	4/30	102	48.7	43.2	55.4	37.3*	19
Stemple Pass	12C1	6900	4/28	42	13.4	9.5	9.4	6.8*	23
Storm Lake	13C7	7780	5/2	63	21.4	16.4	18.0	14.2*	16
Tenmile, Lower	12C2	6250	4/26	26	6.7	6.6	2.7	2.0	22
Tenmile, Middle	12C3	6800	4/26	47	13.4	6.6	9.9	6.9	23
Tenmile, Upper	12C4	8000	4/26	59	18.5	15.1	14.7	10.4	22
TV Mountain	14B1	6800	5/2	57	21.0	21.1	23.4	- -	2
#49 Meadows	15B3	5000	4/30	79	31.5	28.4	32.3	28.8*	17
#Lookout	15B2	5250	4/29	83	38.4	35.3	42.7	22.1*	21
BITTERROOT									
Gibbons Pass	13D2	7100	4/30	73	26.5	26.0	27.2	20.6*	22
Nezperce Camp	14D2	5580	5/2	34	14.1	11.5	15.4	5.5*	19
Nezperce Pass	14D1	6575	5/2	43	17.1	11.7	15.5	10.2*	20
#Lolo Pass	14C5	5230	4/30	64	31.1	33.8	35.6	- -	2
#Moose Creek	13D16	6200				10.3	15.8	10.6	14
#Packers Meadow	14C2	5700	4/30	42	17.9	21.5	23.9	12.9	20

*Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
**Average for period of record.
#Adjacent Basin.

MONTANA SNOW SURVEYS - ABOUT MAY 1, 1958

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS						Total Years of Record
			Date of Survey	1958 Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.)			
						1957	1956	15-Year Average 1938-52	
			HUDSON BAY DRAINAGE						
ST. MARY BASIN									
Iceberg Lake	13A3	5750	5/1	58	26.4	26.2	38.8	23.1	36
Josephine Lower #9	13A15	4900	4/30	38	15.8	17.6	23.1	- -	2
Mount Allen	13A7	5700	4/30	95	44.3	48.3	49.4	39.9	36
Piegan Pass #6	13A6	6250	4/30	80	37.8	41.3	45.4	29.5	36
Ptarmigan #8	13A8	6000	5/1	74	34.6	39.1	48.4	29.7	21
UPPER YELLOWSTONE									
Canyon	10E3	7750	5/1	40	14.3	17.3	17.4	12.1**	13
Cooke City	10D7	7400	4/30	22	7.8	8.2	6.8	6.1**	13
Lake Camp	10E4	7850	4/30	31	9.4	9.3	15.2	8.5**	11
Lake Camp New		7850	4/30	28	7.5	7.7	- -	- -	1
Lodgepole, Wyo.	9E1	8200	5/1	34	9.2	12.6	16.0	9.5*	18
Lewis Lake Div.	10E9	7900	5/1	92	38.5	50.6	63.9	48.3*	6
Lupine	10E1	7300	4/30	22	7.2	8.9	9.4	9.1**	7

*Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
**Average for period of record.

STATUS OF RESERVOIR STORAGE
MISSOURI RIVER IN MONTANA
May, 1958

BASIN & STREAM	RESERVOIR	USABLE CAPACITY 1000 A.F.	USABLE STORAGE - 1000 ACRE FEET				
			1958	1957	1956	1938-52 AVG.	YRS.
MISSOURI RIVER BASIN							
Beaverhead	Lima	84.0	45.3	12.3	46.9	60.0*	17
Madison River	Hebgen Lake	345.0	167.8	175.7	187.6	234.0	22
Madison River	Ennis Lake	41.0	33.0	37.5	27.9	32.6	22
Hyalite Creek	Middle Creek	8.0	4.5	3.7	4.5	4.6**	6
Missouri River	Canyon Ferry	2043.0	1531.0	1479.0	1637.0	1309.0**	5
Missouri River	Hauser Lake & Lake Helena	62.5	52.9	62.5	55.6	42.1*	18
Missouri River	Lake Helena	10.4	7.2	10.4	8.1	4.9**	10
Missouri River	Holter Lake	81.9	71.9	12.6	73.0	55.2	22
N.Fk. Sun River	Gibson	105.0	39.4	46.1	77.0	73.0	22
N.Fk. Sun River	Willow Creek	32.3	24.0	24.5	28.2	14.1	22
N.Fk. Sun River	Pishkun	32.0	17.0	19.0	23.6	18.5	22
Marias River	Tiber	1316.0	--	577.5	130.6	--	2
Birch Creek	Swift	30.0	24.7	28.7	30.0	24.9	22
Dupuyer & Birch	Lake Francis	112.0	97.4	92.0	92.3	78.8	22
Judith River	Ackley Lake	5.8	--	3.7	4.2	4.4*	18
Missouri River	Ft. Peck 3/	19410.0	8102.0	5757.0	5164.0	10914.9*	17
Milk River	Fresno	127.2	125.5	124.4	108.6	93.6	18
Milk River	Nelson	66.8	55.5	58.9	41.8	31.8	22
W. Rosebud Cr.	Mystic Lake	20.8	3.2	3.3	2.0	2.8	22
Tongue River	Tongue River	73.9	--	16.0	18.9	19.6**	17
Swiftcurrent Cr.	Sherburne Lake	66.1	26.9	14.4	25.2	24.9	22
MISSOURI RIVER BASIN - WYOMING							
Shoshone River	Buffalo Bill	440.0	110.0	97.6	130.4	266.6	23
Wind River	Boysen	408.6	197.7	202.5	0.0	246.3	6
Wind River	Pilot Butte	31.6	27.7	27.7	27.3	20.9	22
Bull Creek	Bull Lake	152.0	56.6	60.1	51.9	45.6	20
Belle Fourche	Key Hole	190.0	11.6	3.2	17.2	14.6**	6
MISSOURI RIVER BASIN - NORTH DAKOTA							
Heart River	Heart Butte	54.8	65.0	50.6	67.1	66.6**	8
Heart River	Dickerson	4.3	5.9	5.1	4.8	5.4**	7
Missouri River	Garrison Lake	13805.0	4502.0	1102.0	1256.0	--	3
MISSOURI RIVER BASIN - SOUTH DAKOTA							
Belle Fourche	Belle Fourche	185.0	98.9	62.5	119.0	--	2
Cheyenne River	Angostura	160.0	68.6	40.1	74.4	--	2
Cheyenne River	Deerfield	15.1	12.1	9.2	11.9	13.0**	5
Grand River	Shadehill	84.0	82.0	152.8	140.6	148.4**	5
Missouri River	Ft. Randall	2401.6	2830.5	2132.5	1683.6	--	4

*Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.

**Average for period of record.

3/Gross contents including 617,000 A.F. Dead Storage

STATUS OF RESERVOIR STORAGE
COLUMBIA RIVER IN MONTANA
May, 1958

BASIN & STREAM	RESERVOIR	USABLE CAPACITY 1000 A.F.	USABLE STORAGE - 1000 ACRE FEET 1958	1957	1956	1938-52 AVG.	YRS.
COLUMBIA RIVER BASIN							
Flint Creek	Georgetown Lk.	31.00	21.5	16.0	18.0	21.7*	17
S. Fk. Flathead	Hungry Horse	3500.00	2276.0	1970.0	1942.0	1452.0**	6
Flathead River	Flathead Lake	1791.00	721.7	678.9	1079.0	955.5	50
Flathead River 6/	Camas Res.	42.80	36.9	39.6	41.8	25.8*	17
Flathead River 7/	Mission Valley	98.60	21.1	35.0	47.3	48.5*	17
Jocko Creek	Lower Jocko Lk.	7.6	2.4	1.4	- -	- -	-

*Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.

**Average for period of record.

6/Camas Reservoirs are shown as a sum of (4) small reservoirs on the west side of Flathead Lake located on Dry Creek and Little Bitterroot River.

7/Mission Valley Reservoirs are shown as a sum of (8) small reservoirs located south and east of Flathead Lake. Both Camas and Mission Valley reservoirs are operated by the Indian Irrigation Service.

Federal - State - Private

COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"